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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/769,355	01/30/2004	John M. Koegler	200313825-1	8319
22879	7590	05/18/2005	EXAMINER	
HEWLETT PACKARD COMPANY P O BOX 272400, 3404 E. HARMONY ROAD INTELLECTUAL PROPERTY ADMINISTRATION FORT COLLINS, CO 80527-2400			KOVAL, MELISSA J	
			ART UNIT	PAPER NUMBER
			2851	

DATE MAILED: 05/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/769,355	<b>Applicant(s)</b> KOEGLER ET AL.	
	<b>Examiner</b> Melissa J. Koval	<b>Art Unit</b> 2851	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

**A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.**

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11, 15-20, 25, 31, 33 is/are rejected.
- 7) ☒ Claim(s) 12-14, 21-24 and 26-30 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>1/30/2004</u> . | 6) <input type="checkbox"/> Other: ____.  |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 16 and 17 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: the optical and/or structural connections between the claimed liquid crystal display of claim 16, and the digital mirror device of claim 17 and the claimed projector assembly.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 5-9, 11, 18-20, 25, and 31-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Belliveau U.S. Patent 5,758,955.

Refer to Figure 3, for example.

Claim 1 sets forth: "An integral reflector and heat sink for use in a projector assembly, comprising (See the BACKGROUND OF THE INVENTION and the

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SUMMARY OF THE INVENTION. The examiner recognizes a projection assembly to include devices that simply project light as a term of the art.):

a reflector portion comprising an integrated heat sink (See elliptical reflector 74 and cooling fins 62.); and

a lamp receiving opening defined in said reflector portion (See lamp base 70 and lamp 72.).

Claim 2 sets forth: "The integral reflector and heat sink of claim 1, wherein said heat sink comprises a plurality of cooling fins." Again refer to cooling fins 62.

Claim 3 sets forth: "The integral reflector and heat sink of claim 1, wherein said reflector portion comprises a metallic material." See column 4, line 24.

Claim 5 is rejected for the same reasons already applied to rejected claim 3.

Claim 6 sets forth: "The integral reflector and heat sink of claim 1, further comprising a lamp engaging mechanism coupled to said lamp receiving opening for mechanically coupling a lamp assembly to said reflector." Again refer to lamp base 70.

Claim 7 sets forth: "A light generation assembly, comprising (See the BACKGROUND OF THE INVENTION and the SUMMARY OF THE INVENTION.):

an integral reflector and heat sink (See elliptical reflector 74 and cooling fins 62);

a lamp receiving opening defined in said integral reflector and heat sink (See lamp base 70 and lamp 72);

a lamp assembly replaceably coupled to said integral reflector and heat sink and extending at least partially through said lamp receiving opening (See column 4, lines 42 through 45.);

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a housing configured to facilitate movement of said light generation assembly between an operating configuration and a lamp replacement configuration (See Figures 1, 2 , 4 and 5.); and

a fan assembly coupled to said housing (See cooling fan 48.).”

Claim 8 sets forth: “The assembly of claim 7, wherein said integral reflector and heat sink comprises a plurality of cooling fins.” Again refer to cooling fins 62.

Claim 9 sets forth: “The assembly of claim 7, wherein said integral reflector and heat sink comprises a metallic material.” See column 4, line 24.

Claim 11 is rejected for the same reasons already applied to rejected claim 8.

The method steps of claims 18 through 20 and 25 are met for the same reasons applied to already rejected claims 1-3, 5-9, and 11 above.

With respect to claim 31, again refer to cooling fins 62.

Claim 32 is met for the same reasons already applied to rejected claim 1.

Claim 33 is met for the same reasons already applied to rejected claim 7.

Claims 1-3, 5-9, 11, 15, 18-20, 25, and 31-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Chiu U.S. Patent 5,329,436.

Claim 1 sets forth: “An integral reflector and heat sink for use in a projector assembly, comprising (See the BACKGROUND OF THE INVENTION. The examiner recognizes a projection assembly to include devices that simply project light as a term of the art.):

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a reflector portion comprising an integrated heat sink (See column 1, lines 25 through 37, and lines 59 through 62. Also see heat sink assembly 50.); and

a lamp receiving opening defined in said reflector portion (See lamp package 10 and light exit port opening 62.).

Claim 32 is met for the same reasons already applied to rejected claim 1.

Claim 2 sets forth: "The integral reflector and heat sink of claim 1, wherein said heat sink comprises a plurality of cooling fins." See a description of cooling fins with respect to heat sink 52 in column 3, lines 33 through 47.

With respect to claims 3, 5 and 7, see column 1, lines 37 through 49.

Claim 6 sets forth: "The integral reflector and heat sink of claim 1, further comprising a lamp engaging mechanism coupled to said lamp receiving opening for mechanically coupling a lamp assembly to said reflector." See Figures 1a-1c and Figure 2d.

Claim 8 is rejected for the same reasons applied to rejected claim 2.

Claims 9 and 11 are rejected for the same reasons applied to claims 3 and 5, respectively.

Claim 15 sets forth: "A projector assembly, comprising (See the BACKGROUND OF THE INVENTION. The examiner recognizes a projection assembly to include devices that simply project light as a term of the art.):

a light generation assembly having an integral reflector and heat sink , a lamp receiving opening defined in said integral reflector and heat sink, a lamp assembly replaceably coupled to said integral reflector and heat sink and extending at least

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partially through said lamp receiving opening, and a housing for mounting said light generation assembly and moving said light generation assembly between an operating configuration and a lamp replacement configuration (See column 1, lines 25 through 37; column 2, lines 65 through 67; and column 3, lines 1 through 47.); and

a projection assembly optically coupled to said light generation assembly (sapphire window 22).

With respect to the fan assembly of claim 18, see column 1, lines 38 through 49.

Claims 19, 20, 32 and 33 are rejected for the same reasons already applied to claims 15 and 18. Furthermore refer to the embodiments described in column 3, lines 48 through 67, and column 4, lines 1 through 54 of '436.

Claim 25 is rejected for the same reasons already applied to claims 15 and 18.

With respect to claim 31, again see the cooling fins described in column 3, lines 23 through 47.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Belliveau U.S. Patent 5,758,955 or Chiu U.S. Patent 5,329,436 in view of Zellhoefer U.S. Patent 4,156,057.

Belliveau and Chiu teach all of the elements of both claims 4 and 10, however both are silent to the use of zinc as a heat sink material.

Zinc heat sinks are known as shown by Zellhoeffer '057 as shown with respect to Figure 10, element 40. Sometimes the zinc is also used with aluminum powder. See column 2, lines 65 through 67, and column 3, lines 1 through 20.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use a heat sink, such as the one shown by either Belliveau or Chiu, made of zinc, as suggested by Zellhoefer. The motivation for one having ordinary skill in the art to make use of a zinc heat sink would be to increase the life of the light source comprised by the projection assembly.

#### ***Allowable Subject Matter***

Claims 12-14, 21-24, and 26-30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Each and every limitation of the dependent claims 12-14, 21-24, and 26-30 renders those claims allowable over the prior art of record.



**Conclusion**

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Meuse et al. U.S. Patent 5,947,590 teaches a high power arc lamp reflector with shroud and plurality of cooling fins on exterior surface of reflector for image projector.

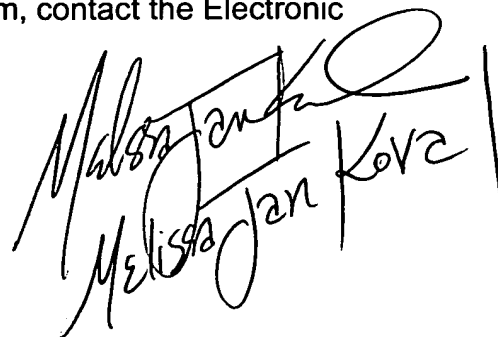
Nagao et al. US 2002/0191159 A1 teaches a projector.

Nagata et al. U.S. Patent 2004/0264192 A1 teaches a light source apparatus, method of manufacture therefor, and projection type display apparatus.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melissa J. Koval whose telephone number is (571) 272-2121. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571) 272-2258. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Handwritten signature of Melissa J. Koval in black ink, with the name 'Melissa J. Koval' written vertically next to it.